

# Hobbies

## WEEKLY

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DESIGN FOR MODEL  
'O' GAUGE STATION

October 19th, 1949

Price Fourpence

Vol. 109 No. 2816

## A Wooden Model CANTILEVER CRANE

ANY design of crane seems a popular model, so one of the cantilever type will, it is hoped, be welcome. The model is of a fair size, standing some 18in. high, and being of the working kind should prove interesting and instructive. It is of a type popular at the docks for unloading vessels, having a horizontal travelling movement as well as a lifting one, so that any parts of the ship can be reached with ease.

### The Pillar Parts

For making this crane it is suggested that deal of  $\frac{3}{4}$ in. thickness be used for the pillar, and sides of the horizontal jib, with  $\frac{1}{2}$ in. fretwood for the remainder. The pillar, Fig. 1, is a tapering shape. Cut two pieces of the dimensions given, and two lesser in width by the thickness of the wood used, to make the structure square.

If  $\frac{3}{4}$ in. wood is used, as suggested, this will mean that the remaining two sides will measure  $1\frac{1}{4}$ in. at the top and  $3\frac{1}{4}$ in. at the bottom. Nail and glue these parts together, as shown in the diagram.

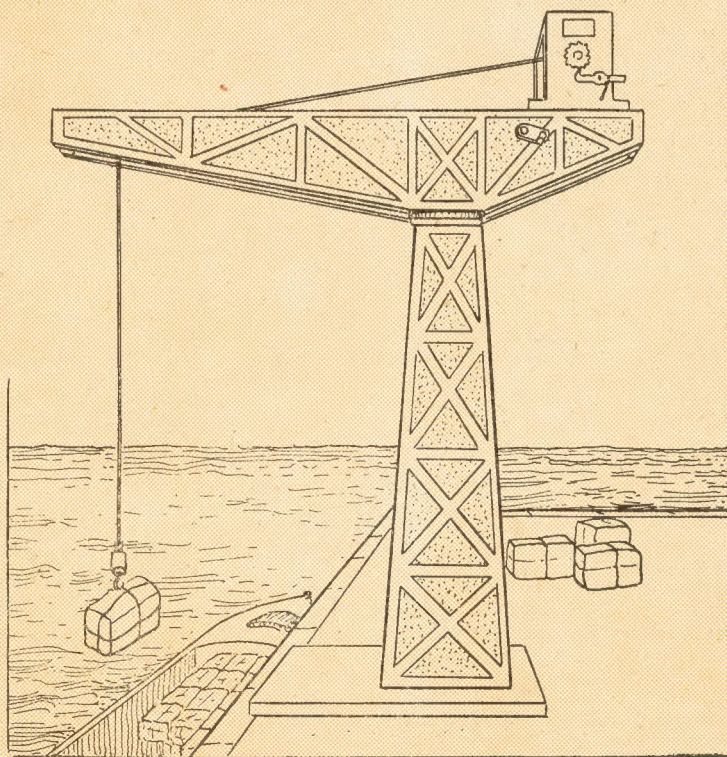
The top and bottom edges will need to be planed a trifle, on account of the tilt of the sides, then a top and base piece can be nailed on. The top piece is  $2\frac{1}{4}$ in. square, the bottom piece measures 6in. wide and 10in. long, the pillar being glued to it, leaving a space of 1in. on three sides and 5in. on one. For this base a piece of thicker wood could be employed, say,  $\frac{1}{2}$ in. thick. A nicely planed bit of box wood would serve here.

For the horizontal jib, cut two of

part (A). Near the forward end, say,  $\frac{1}{2}$ in. away, bore a small hole to take a thin nail on which a pulley can revolve. A metal pulley, not larger than  $\frac{3}{4}$ in. should be used here. At spot (a), about 4in. from the rear, and in line with the

pulley hole at the front, bore a  $\frac{3}{8}$ in. hole for the winding gear operating the traveller now to be mentioned. The two sides of the jib are connected together by three crosspieces of wood.

One of these is shown (B). This piece





goes across at the bottom, where the jib is pivoted. Two other pieces are to be cut, the same length, i.e.,  $1\frac{1}{2}$  in. long, and about 1 in. wide. One is glued and nailed across at the rear end, and the other at the front, just behind the pulley.

### The Traveller

Prepare two strips of  $\frac{1}{2}$  in. square wood, and glue them along  $\frac{1}{4}$  in. apart, as shown at (b). These are long enough to stretch from the front crosspiece to the pivotal centre. They should lie just above and below the centre of the pulley, as will be seen in the drawing. Between these a traveller (C) will work, the traveller carrying the second pulley



Fig. 1—The tower

over which the lifting cord will pass, operated from the cabin at the rear.

Cut the traveller from  $\frac{1}{2}$  in. fretwood to size given and near the front edge saw out a slot in which a small metal pulley can be fitted, using a thin nail again as a spindle. This pulley slot should be slightly on one side, not central, so that cords of the traveller and lifting gear do not foul each other. Cover the front edge with a strip of metal, to which a tiny wire hook has been soldered. A small screw-eye is driven in the centre of the back edge.

Cords are to be tied to these hooks as explained further on, for pulling the traveller to and fro. Glasspaper it well, if necessary, so that it can move freely along between its guiding strips (b).

### Pulley Fitting

The pulley at the front can now be fitted, if not done already, then a  $2\frac{1}{2}$  in. disc of fretwood, to size shown should be glued where indicated, and a screw hole bored through its centre, also through the centre of piece (B). The jib is now fitted to the pillar with a central round-headed stout brass screw, to enable it to swing round as wanted. Place a washer underneath the screw head to ease the action.

For the winding action operating the traveller, cut a  $2\frac{3}{4}$  in. length of  $\frac{3}{8}$  in. round wood rod, to work in holes (A). A ratchet wheel is also wanted. Mark

this out on paper to pattern (E). It is quite simple to mark out. Strike a  $1\frac{1}{2}$  in. circle; then from the same centre a  $1\frac{1}{4}$  in. one.

Between these the teeth are set out, the circles being divided into twelve equal parts, one for each tooth. Paste the pattern to the fretwood, and saw carefully out. Bore a  $\frac{3}{8}$  in. hole in the centre and glue the wheel to the right-hand end of the rod, then push in the bearing holes. A suitable handle is made and glued to the opposite end of the rod.

### The Pawl

From the fretwood cut a pawl to the shape shown at (F) and fix with a small screw, the tooth of the pawl engaging with the teeth of the ratchet in the

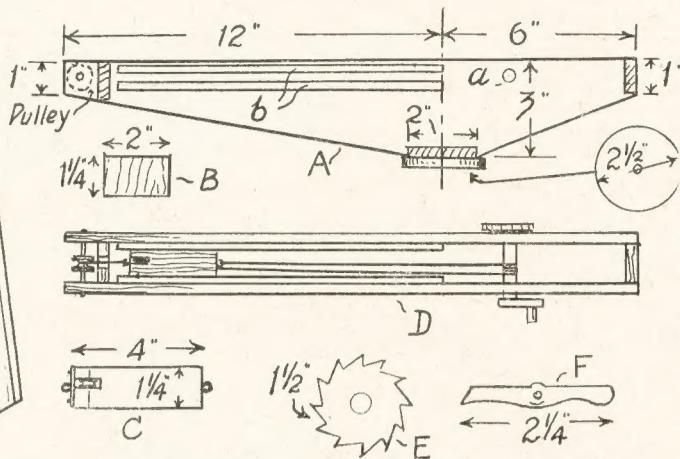


Fig. 2—Parts forming the head of the crane

$2\frac{3}{4}$  in. piece of round wood rod,  $\frac{3}{8}$  in. diameter.

Glue and nail the parts together, then cut out a second ratchet wheel, using the pattern at (E), and glue it to the rod, left-hand end. Push through the bearing holes in the sides and glue a handle on the opposite side.

A pawl, of the shape shown at (K), Fig. 4, should be cut, and be fitted, as shown in the detail sketch of the cabin, Fig. 4, an elastic band or light spring, keeping it engaged with the pawl. Fix

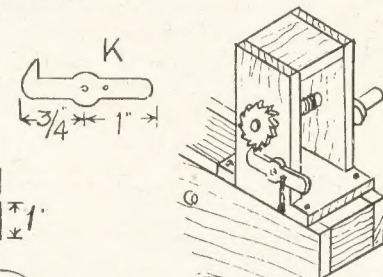


Fig. 4—Hook and winding mechanism

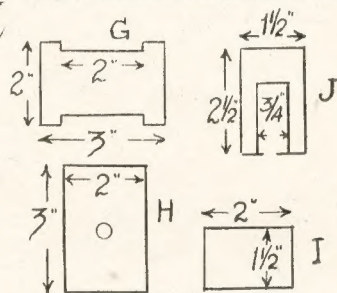


Fig. 3—Parts of the cabin

usual way. Keep the pawl down with a small spring or elastic band. To connect this apparatus with the traveller follow these directions carefully.

Firstly, in the centre of the winding rod drive, partly in, a tiny round-headed brass screw, a  $\frac{1}{2}$  in. one will be large enough. Take a length of thin cord or twine, and tie it to the forward end of the traveller. Bring the traveller up to the cabin end, as far as possible, hold it there, then pass the cord over the front pulley, underneath the traveller, then under the winding rod, and give it one turn round the screw.

Tighten the screw, then take the loose end of the cord, twist the rod until the traveller is pulled to the end of the jib, and while it is there, tie the loose end of the cord to the hook, the rear end one, of course. Now, by turning the winding gear, the traveller will move to and fro to the extent of its range. A plan view of the jib (D) will make any details of the action, not quite plain, clear enough. Small slots must be cut in the forward crosspiece to let these cords pass, as will be seen.

### The Cabin

The cabin, from which the lifting gear is operated, is shown in parts at Fig. 3, made from the fretwood. The base is shown at (G), sides at (H), top at (I) and front at (J). In the centre of the sides bore a  $\frac{3}{8}$  in. hole for the winding drum, a

the cabin to the rear end of the jib with screws. Fix a small nail or screw to the centre of the rod, tie a length of thin cord to it, lead it out at the front and over the pulley in the traveller. Allow sufficient for working, then tie to its end a small weighted hook.

Quite a good hook for the crane can be bent up from stiff wire, such as can be cut from a stout large size safety pin, and weighted with a piece of lead, tightly hammered round it. This completes the work of construction. Now for the painted finish.

### Painting the Model

The whole can be painted in any colour chosen, with imitation lattice work carefully added in a darker colour. The finished view of the crane will give a good idea of the lattice work. As a suggestion only, the wood might be painted grey and the lattice black or dark green.

Anyway, it is a matter of personal choice. It will be found more convenient if the painting is done during the work of construction, rather than at the end, as some parts might prove difficult of access.

Take as much care as possible with this painting as it is going to make all the difference in the appearance of the finished article. Black lines can be drawn on in indian ink, and ordinary coloured paint used for the remainder of the parts.



# Patterns on page 47 provide for making this novelty— THE ROCKING BIRD

**H**ERE is an amusing little toy that can be made with the fretsaw from a few pieces of fretwood.

The sketch of the finished article on this page shows the principle of working, which is carried out by means of a swinging ball. The head and tail of the bird are pivoted to the body, and a cord is attached to each moving part.

The two cords are carried down below the base of the toy and are connected to a single cord of good length, at the end of which is secured a wood ball.

When the ball is swung from side to side it causes the looped cord to tighten and slacken alternately. The head and tail of the bird thus rises and falls continuously on their pivots as long as the ball is in motion.

## The Base

There must be a base for the toy, and the true shape of this is given full size on the special pattern sheet included in this

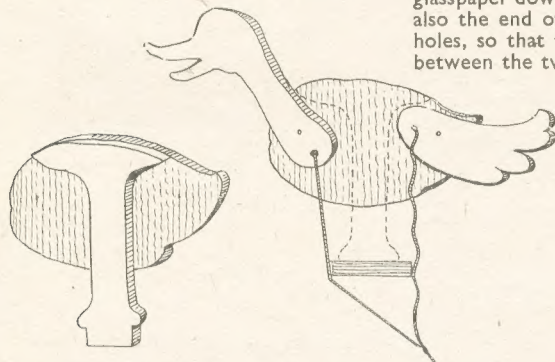


Fig. 1—Body and support piece

Fig. 2—The string movement

issue on cover III. Paste the pattern down to a piece of  $\frac{1}{2}$  in. or  $\frac{3}{4}$  in. fretwood and cut round with the fretsaw. Being so simple in outline, a tracing of the base could alternatively be made on thin paper and this then pinned down to the wood and the outline gone over in pencil, a piece of carbon paper being sandwiched between the two layers.

This latter suggestion could apply to all the other parts of the toy shown on the pattern sheet, the copy of 'Hobbies' is thus preserved for future work.

## The Body Portion

The upright upon which the body of the bird is glued fits into the mortise (A) of the base, while a little distance away from this is a larger hole (B) to take the top of an ordinary fretworker's cramp. Thus the toy can be held securely to a shelf or table edge, and the motion of the bird better seen than if the base were held in the hand.

The body of the bird consists of two pieces cut to the outline shown on the

pattern sheet. After cutting the one piece and pricking in with a pin the two centres (P) for the pivot screws, clean up the edges and lay the piece on the second piece of wood and draw round it with a sharp pencil. Finally, hold the two cleaned-up pieces together and bore small holes where indicated by the pin-pricks through both, thus assuring accuracy later on when the head and tail are fitted.

## Support to Base

Next make the upright support according to that on the pattern sheet from  $\frac{1}{2}$  in. wood, and see that the tenon (A) fits stiffly into the base. Now cut out the head and tail outlines from those shown on the pattern sheet, and note well where the pivot holes come—marked (P) and the holes near to them which are to take the cords.

Wood  $\frac{1}{2}$  in. thick may be used for the head and tail, but it will be necessary to glasspaper down the end of the neck and also the end of the tail, near the pivot holes, so that those parts work loosely between the two sides of the bird after the support has been glued between them.

In Fig. 1 is shown the manner of gluing in the support to one of the body sections, and in Fig. 2, how the head and tail are pivoted and the cords attached. The near side of the bird in Fig. 2 is, of course, omitted for sake of clearness. In fixing the cords to the head and neck, this must, obviously, be done before

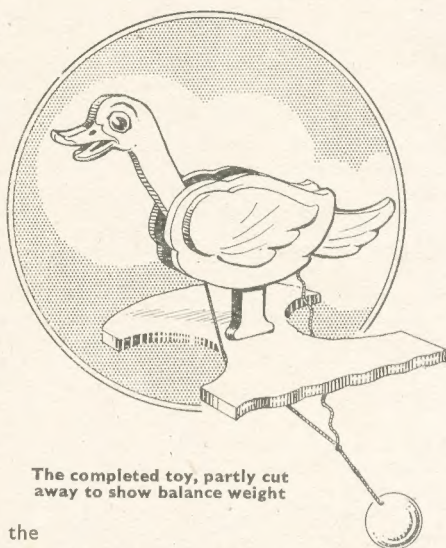
the parts are inserted between the two body sections.

It will be a good plan to make a shallow vee groove from the actual hole to the edge of the wood, as seen by the dotted lines on the two diagrams on the pattern sheet. The cords, after being knotted and glued into the holes can then pass down through the grooves and thus hang clear of the sides of the body of the bird.

The only thing remaining to be done now is to put the head and the tail in place between the body parts and run the pivot screw in, this screw, be it remembered, should be screwed into the two sides, but must pass freely through the hole in the neck and the tail. The two latter must hang loosely on the pivot screw and plenty of freedom allowed when the ball below is in action.

## Painted Finish

In painting the toy, choose bright and attractive colours, or if the wood



The completed toy, partly cut away to show balance weight

permits, ordinary stain and varnish might be applied. Two wings, as overlays, might be added and painted up gaily to attract. Note that the patterns for the wings are included on the sheet provided.

Such toys as this would sell well at bazaars and sales of work, and quite a reasonable profit made by selling them to toy shops. A note, however, regarding this last suggestion. If a number of these bird novelties are to be made, a thin metal or card template should be cut for the six parts, that is one template for each, base, body, head, tail, support and wing.

Then in the marking out on the scraps of wood economy can be studied to the best advantage by careful spacing and placing each template.

## Polishes and Stains for Wood

**T**HIS new edition of a standard work will, no doubt, be as popular as ever. A mass of information is packed into its 80 pages, and all is of a direct and informative kind. It deals with all types of staining, polishing, waxing, ebonizing, glazing, etc., as well as giving chapters on preparation. A large number of readers write asking us for instructions on this work, and we can now recommend them to read a book such as this and they will have a very satisfactory working knowledge of the subject. Published by Link House Publications, 24 Store Street, London, W.C.1—Price 2/6



# Any housewife would be glad if you made her this FOLDING TEASTAND

**H**ERE is a useful little stand any home wood-worker could easily make up. It is so constructed that it folds and thus takes up very little space in the room; in fact it can be put away in any odd corner. And as the trays are made separately these are ideal for handing round refreshment.

The wood suggested for this to be made from is oak or beech, as either of these is readily finished in stain and varnish or ordinary polish. Should neither be forthcoming, then a soft wood could well be used and painted artistically with one or two of the many cellulose paints now on the market.

## Two Frames

The stand consists of two distinct frames, as shown in Fig. 1, and made up entirely from  $\frac{3}{4}$ in. square wood. The cross rails are tenoned into the legs quite simply, as Fig. 2 shows. All these joints can be cut with the fretsaw, and very neat and well-fitting joints made, too, if proper care and attention is given to the marking out.

It must be remembered also to take the precaution of cutting along the inside of the drawn lines of the mortises, and along the outside of the lines of the tenons. A good well-fitting joint is thus assured. The tenons should be one third the width of the stuff, that is  $\frac{1}{4}$ in. wide, and made the full depth of the rail, which would be  $\frac{3}{4}$ in.

## Rail Joints

The manner of setting out the uprights and the rails is given in Fig. 1, and the measurements shown should give all the necessary information required for making both frames. There are to be open slots cut in the tops of the uprights of the larger frame, as shown in the detail, Fig. 3. These slots take the ends of

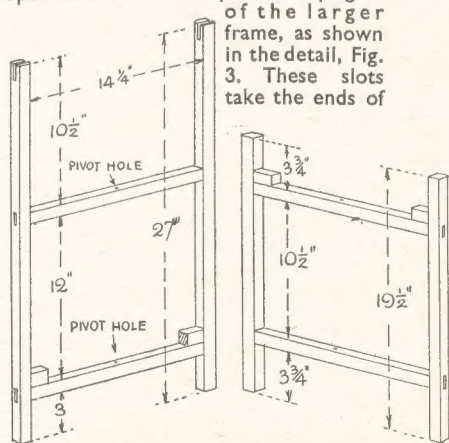


Fig. 1—Detail of the two frames

the handle section, measurements and details for which are given in Fig. 4.

When drawing out this top rail see the opening or hand-hole is kept central with the width, so the wood will not be weakened either side. Clean round the opening with coarse glasspaper, getting a nicely rounded effect where the hand grips. Finally rub smooth with fine grade glasspaper.

When all the joints are glued, bore holes for them and drive in hardwood dowel pins to give strength to the construction. Dowel pins should also be put through the joints of the top cross rail, as shown in Fig. 4. The tops of the four legs should also be neatly rounded and made smooth with glasspaper.

## Pivot Screws

When the frames are complete, mark out the centres carefully on the four cross rails and bore holes for the pivot screws. Bear in mind when putting in these screws that they must pass freely through the holes of the larger frame but must screw tightly into the rails of the smaller one, thus allowing them to swing easily.

Note the position of the small blocks of wood attached to the lower rails of the larger frame and to the top rail of the smaller one. These, as will be seen, are necessary to hold the trays level when the frames are swung open. Each block is about  $1\frac{1}{2}$ ins. long by  $\frac{3}{4}$ in. square in section.

The two trays are made from  $\frac{3}{16}$ in. plywood, or, if this material cannot be obtained, then two pieces of composition board would answer equally well. Or even asbestos sheeting could be adopted as a good substitute. Get two pieces of the material  $14\frac{1}{2}$ ins. square and mark

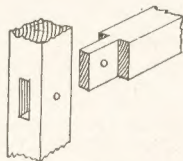


Fig. 2—Leg rail tenons

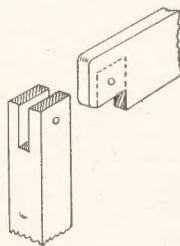


Fig. 3—Handle rail joint

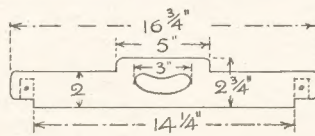
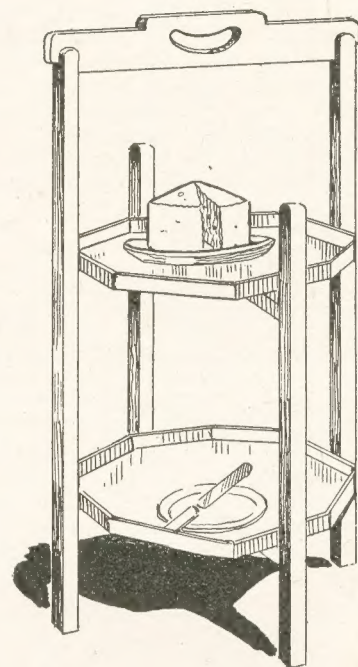


Fig. 4—Shape of the handle rail



across the centre lines, shown dotted in the detail, Fig. 5.

Then set out 3ins. either side of these centre lines on to the edges, and draw lines which will be found to be at 45 degrees angle across the corners. If a set square of the angle mentioned is handy, then the setting out work will be simplified.

## Tray Edging

An edging to the trays is formed by cutting off strips of  $\frac{3}{4}$ in. by  $\frac{3}{4}$ in. wood, mitring them together at the angles and gluing and pinning them securely all round. Clean off the underside of the edging strips flush with the base of the trays, and then round off the top edges neatly.

To get a good surface for painting the trays, the top surfaces should be carefully papered down. Two coats of paint will be found sufficient. An excellent combination of colours for the article would be to have the frames black and the trays yellow, pink or light green.

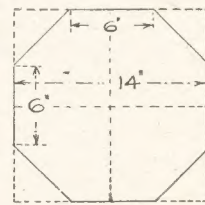


Fig. 5—The octagonal tray dimensions

There are many interesting announcements in our advertisement pages



# With scissor, paste and paper you can make pleasing SILHOUETTE PORTRAITS

**A** CHANGE from constructional work is often welcome, and during the long dark nights of winter readers may care to try their hand at cutting silhouettes of their friends and family. This old fashioned art was invented by a Frenchman, Etienne Silhouette, in 1759, and had a rage in this country during the early part of the 19th century.

It was the days before photography made portraiture easy, and cheap—the poor man could not afford the services of a miniature painter, and the cost of any painting was even more beyond his purse. With the advent of the silhouette, a recognizable portrait was possible at a low cost, hence its popularity.

## Scissors and Paper

The skilful cutter disdained any tools for the work beyond his black gummed paper, and a pair of scissors, but the unskilled could always use a profile machine, and obtain excellent results. Without troubling about a machine a

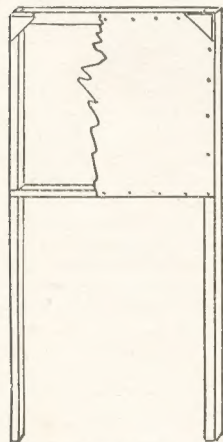


Fig. 1—A suitable screen

good likeness can be obtained with the use of a screen and a lamp, the latter so adjusted as to throw a clearly defined shadow of the sitter's features on it.

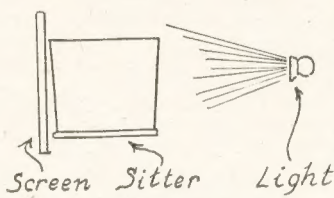


Fig. 2—Positions for drawing

A sketch of such a screen is given in Fig. 1. Nothing elaborate need be attempted; it is, as the drawing indicates, just a frame of wood, with a crossbar, forming a panel opening, the opening being covered with a stout sheet of cartridge paper. This frame can be stiffened at its upper corners with two small triangular bits of thin wood, plywood if possible.

The height should be such as to bring the paper panel in the right position for the head of the sitter to be silhouetted on it, the sitter taking his or her place on a convenient chair, near to the screen.

The diagram, Fig. 2, shows the arrangement. Almost any lamp will do for casting the shadow on the screen, a bicycle lamp giving a broad beam of light would suit nicely. Let the sitter be as near to the screen as possible, to cast the sharpest shadow. The frame could be tied to the chair, in some cases, or if

this proves not feasible, be just supported by a box, nailed to it. Readers will be able to use their own ingenuity about that.

Adjust the position of both sitter, and light, to get the best outline. It will be most convenient to set the chair with its back at right angles to the screen, as in the diagram, and to place it so that no part of it casts a shadow on the screen.

The reader then takes his place on the reverse side of the screen and, with a soft lead pencil, a 2B one for instance, traces the outline of the shadow. The sitter must, of course, during the tracing part, keep quite still, and as this is a trying thing to do for any length of time, the work of tracing should be done as expeditiously as is possible for good work.

## Getting the Portrait

The portrait, as traced, is, of course, much too large, and a reduced copy should be made for cutting out. The necessary reductions can be accomplished in two ways. Firstly, by ruling the screen paper into squares and copying on the black paper an equal number of the squares, but much smaller, and then copying the lines of the silhouette accurately. Secondly, by means of that invaluable instrument, the pantograph.

The paper used should be, if at all obtainable, a surface coloured one. It need not necessarily be black (though that is best), but a dark blue, with a white surface at its back. If solid black paper has to be used, it will be easier to mark out if a thin white paper is gummed to it one side, of course, on which the silhouettes can be pencilled, the white paper being afterwards removed by the application of a damp sponge and warm water.

## Cutting Out

A convenient size of paper measures 4 in. by 2½ in. just about right for a small portrait. Use a pair of scissors with thin pointed blades for cutting. Start at point (A) in Fig. 3, and work upwards. Take care in cutting, especially over the features such as nose, lips, etc.

It is quite a good idea to exaggerate slightly any conspicuous ones, such as a prominent chin for example, but not to the extent of a caricature. It should also be remembered that the position of the



Fig. 3—A complete figure cut-out



Fig. 4—A border adds attractiveness

sitter should be so arranged that prominent and easily recognizable features are made the most of.

When the silhouette is cut out, the collar, shown in the example, Fig. 3, can be clearly defined by cutting. In fact, when gumming down the portrait, the latter might well be cut across in two parts, leaving a space between for the collar, the extremities being marked by short lines, put in in Indian ink. The smoke from the cigarette can be similarly added, to impart a realistic touch.

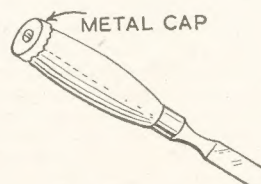
## Border Decoration

Fig. 4 shows a silhouette surrounded with a ribbon border, put in with a compass. It makes a pleasing finish, especially to a lady's portrait. After a few trials, the reader may be encouraged to try his hand at full-length silhouettes. These are shadowed similarly, but the paper on the screen must extend the full height, instead of being confined to a panel. In a full-length portrait, pose is everything, so do not forget to place your sitter in a characteristic attitude.

Enough has been written here to give the reader seeking some indoor diversion a good idea how to silhouette his friends, and provide an interesting and pleasant pastime for a winter's evening.

## Prevents Splitting

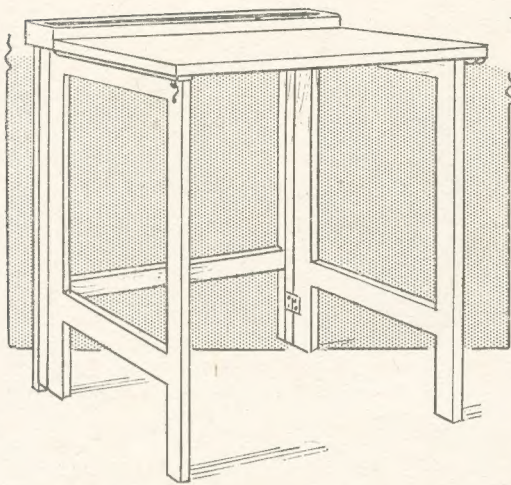
**O**N a chisel that has to be pounded by a mallet, the best thing to do is to fasten a lemonade bottle metal cap to the handle as shown in the diagram. This pre-



vents the wooden handle from splitting and when the old cap is worn out, it can easily be replaced by a new one.



# For model-making or craftwork this is a useful FOLDING TABLE



On the right hand upright, where shown by the dotted lines, glue and nail a 1in. wide strip of wood, as shown in the inset sketch. To this frame two other frames, now to be described, are hinged. The left side frame, shown in the diagram is made similarly to the back frame, and is hinged with 2in. iron butt hinges, to the left side upright.

The third frame, not illustrated, is similar to that already mentioned but is 1in. less in width. It is hinged, not to the back frame but to the 1in. strip glued to it. Details of this hinging are given at (B) in Fig. 3, from which it will

be seen that both frames can swing inwards over the back frame, one over another as it were.

## Table Tops

The table top, Fig. 2, is best made up of tongued and grooved boards, and to the dimensions given. Cut off the top part (A) and plane the sawn edges of both smooth. The diagram shows an underside view, and how the top parts are hinged together, using 2in. back flap hinges, spaced about 4in. in from the side edges. Recess these hinges flush so that the knuckles only stick out. At each side edge, shown by dotted lines, a batten is screwed across, but this can be attended to later on.

Close the frames together, place the table on and screw it, the (A) part, of course, to the back frame only. Countersink these screws as no projections are wanted. When screwing down, see that the outermost frame underneath comes to about  $\frac{1}{2}$ in. of the edge of part (A) not quite to the edges hinged together.

Support this (A) part at the rear with a suitably sized piece of wood, glued and nailed as at C1 (Fig. 3). In fact, this piece need not go the whole width of the frame, if a 3in. long strip is fitted at each side, it will be enough and at least save a little wood. It should now be noticed if, on opening the frames, they catch the hinges of the table-top underneath. The knuckle parts may, and if so, just saw and chisel out two notches to clear.

With the frames outwards, supporting the top, run a pencil along under-

neath, against the frames, to mark exactly where they come on the top. These lines will be a guide to fixing the side battens which, being screwed down underneath will prevent the top warping, and also the frames being swung too wide, and straining the hinges.

## MATERIAL NEEDED

- 6 pieces—1in. by 2in. by 2ft. 5in.
- 2 pieces—1in. by 2in. by 2ft.
- 2 pieces—1in. by 2in. by 1ft. 7in.
- 2 pieces—1in. by 2in. by 1ft. 6in.
- 1 piece—1in. by 1in. by 2ft. 5in.

For table top—1in. by  $4\frac{1}{2}$ in. tongued and grooved board 13ft. run. Remainder from scrap.

Metalwork—2 pairs 2in. iron butt hinges. 1 pair 2in. backflap hinges, 2 hook and eye fasteners.

The end edges of these battens should be bevelled off a little to look as inconspicuous as possible. With the frames butting up against the battens, fix a screw-eye and hook, as in detail (D), Fig. 3, to keep all in position. The table should now be quite firm for any modelling work to be done on it.

To make up the shallow tray at the rear, prepare some strips of  $\frac{3}{4}$ in. by 2in. wood, and nail and glue these to the back and ends of piece (A). Another strip, this time,  $1\frac{1}{2}$ in. wide, is fixed along the front of (A) to finish the tray part. These details are shown at (C), Fig. 1.

Give the woodwork a clean up with glasspaper. The completed table can be varnished or painted. It would be as well, perhaps, to let the top alone, as it can then be wiped clean much easier, and will not show up scratches so easily. Of course, it could be covered with a scrap piece of cork lino, providing a nice surface to work on.

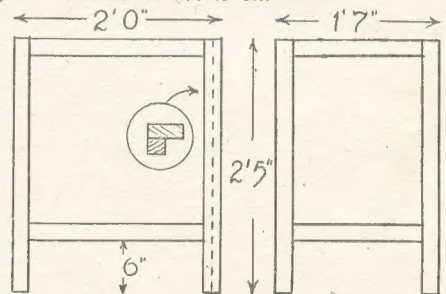


Fig. 1—Frames forming the legs

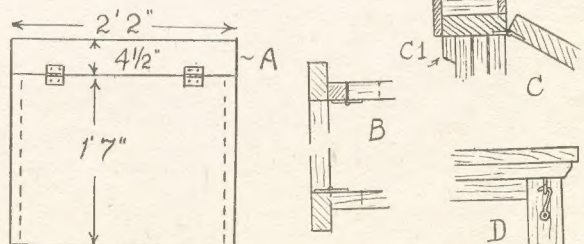


Fig. 2—The two-piece top

Fig. 3—Detail of hanging and fixing

**A** TABLE for making models on can be a most useful piece of work. It happens, perhaps, unfortunately, that when working on the kitchen or living-room table, one gets in the way of the housewife very often, and consequently out of favour. Especially is this the case when the glue-pot gets upset, or the table gets bespattered with paint. A further reason for using one's own table for such work, is the need to allow the uncompleted or freshly painted model, to remain where it is for a time, undisturbed.

The table, illustrated, is of the folding variety, and folds flat when not in use, so occupying little room. It is a nice convenient size for working on, and calls for no great skill in making.

Also, it is provided with a shallow tray at the back, just handy for those tools the model maker needs. It may be added that the table is intended for those whose hobby is modelling in light materials, it is unsuitable for model engineering, unless of a small nature, and heavier woodwork.

## The Leg Frames

Deal can be used for its construction, and the wood should be a fair thickness, to ensure a firm and stable product. It should not be less than 1in. thick, which means  $\frac{3}{4}$ in. when planed. At Fig. 1 a view is given of two of the three frames necessary to support the table top. The left side one is the back frame.

It can be made up of 2in. wide strips of the wood, and be mortised and tenoned together in the usual style, or if a less troublesome job is preferred, just halved together at the joints. The former method is always to be preferred as the result, if well done, looks much better. However, a halved joint, well glued and nailed, is quite strong enough, if not so professional and workmanlike in appearance.



# Another stage in the preparation of amusing HAND PUPPETS

**N**OW Mr. Punch and, for that matter, all other hand puppets are quite willing to entertain us over garden walls or clothes horses, but at the same time they feel more at home in a booth of their own; a 'Castello', a castle as the Italian showmen have it. This booth, known to English showmen as a 'fit-up', has been the stage for glove puppet plays for many centuries and its general form has never varied.

## The Frame

In this, and other European countries, the booth has always been a tall narrow affair some 4ft. square, in which the operator has little room to turn about. There are, however, puppeteers who are breaking away from the traditional type booth and are working in castellos which have stage openings at least twice, if not three times as wide as they are high, perhaps, 10ft. to 12ft. wide, but still about 3ft. high. The advantages of this wider theatre are, greater room backstage, and a bigger stage-picture appealing to a larger audience.

There are no set rules and fixed sizes for these fit-ups. They can be any reasonable size, but their dimensions should be based always on the freedom of movement for the operator, and a full, clear view of the action for the spectators.

## The Puppet Booth

The puppet booth consists of two main parts, the Frame and the Maskings or draperies. The Frame, which includes the proscenium is made, usually, of wooden strips held in position by bolts and fly-nuts. The illustrations will convey some idea of its general form

but if the puppeteer has ingenuity and a flair for construction he will, probably, make his framework to embody his own ideas of rigidity and strength.

The 'stage' level should be about 6ft. above the ground or floor; if the operator is very tall, this level can be made higher but, at the same time, the width of the stage opening should be increased to maintain a sense of proportion.

Some showmen make their booths of metal, using tubing, angle rods, and strips of duralumin, or some similar light but strong metal. This means a portable fit-up which occupies less room and is less liable to breakages in transport.

## Proscenium

For the wooden frame strong hard timber should be used. Some showmen build their frames of 1in. by 1in. material, but something a little stouter than this would be better, add very little to the weight and certainly increase the

strength and rigidity of the erection.

The Proscenium, or stage front, is a matter in which the Showman will use his own personal taste as regards design and colour. He may decide to dispense with a stage opening and work in front of a simple 'sky' or curtain background only. Some Russian and Chinese showmen perform without proscenium or scenery.

## The Playboard

If a proscenium is used it can be made of plywood and consists of three parts, two of which are side panels and the third the top or pelmet. This pelmet may be made in halves and hinged to fold for transport. The panels, if of plywood, should be framed at the back to prevent warping. The whole stage-front should be bolted together and held to the fit-up frame by bolts and nuts. The shelf which runs along the stage level of the opening is known as the 'Playboard'. It should be about 6in. wide and its duty, apart from acting as a stage, is to carry such properties as will be needed in the play. It is constantly in use.

Fig. 2 (right)  
The playboard  
end fitting

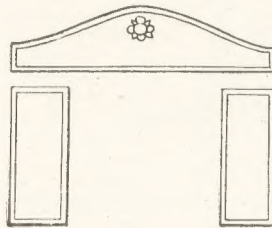


Fig. 3—The proscenium in three pieces



Fig. 5—The clown's trick entry

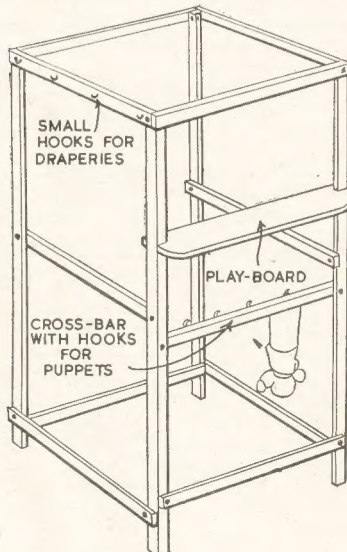


Fig. 1—Framework of the booth

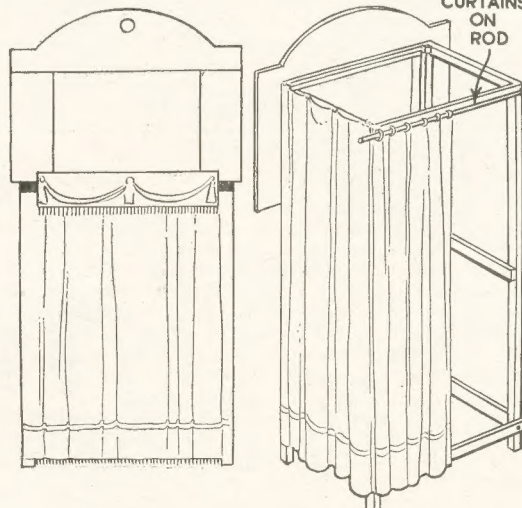


Fig. 4—Front and back view of completed fit-up

This board should be made to rest on the stage-level cross bar of the framework. It should be rigid but easy to lift off when the show is dismantled.

Decoration of the proscenium is, again, a matter of individual taste, but the more simple the design the more refined will be the general appearance of the show. If the puppeteer is not an artist he should restrain from painting elaborate scroll and figure work on the panels. Keep to simple panels with, perhaps, a carefully chosen beading around their edges and a simple 'compo' ornament for the centre of the pelmet. Gaudy colour schemes should be avoided, as such decorations serve to attract attention instead of acting as the frame for the stage picture.

(Continued foot of page 40)



# The home handyman should know the needs and uses of HOME CEMENTS

**T**HE home mechanic and handyman is occasionally confronted with some special piece of work which requires joining together, either by cementing or by the use of adhesive, and will frequently find that the substance used for the purpose does not adhere equally well to both articles to be united, should they be of a different character.

He may not know that different materials need different adhesives, and that, where dissimilar substances are to be united, there are known formulae for making just the particular cement for the purpose. In the notes given here and in subsequent issues we supply the needed information, as well as explaining the methods of using the various adhesives.

## Cement for Knife Handles

Fill the hole at the end of the handle with a mixture of 1 part of brick-dust or plaster of paris and 1 part of beeswax, heat the tang of the blade and press into the hole.

Another very strong cement for this purpose is composed of 2 parts of brick-dust, 2 parts of tallow, 4 parts of rosin and 4 parts of pitch. The rosin and brick-dust are first mixed as powders, and the hole half-filled; the tallow and pitch are then added till the hole is filled, and the heated tang pressed in as before.

Sixteen parts of rosin, 16 parts of whiting and 1 part of candle-wax makes a good cement for the same job.

## Acid-proof Cement

By making a paste of a concentrated solution of 'waterglass' (silicate of soda) and powdered glass, a cement will be formed which will prove invaluable in laboratory operations, where joints are required to resist the fumes of sulphuric, nitric or hydrochloric acids.

## Ivory or Mother-of-Pearl Cement

Dissolve 1 part of isinglass in 30 parts of water. Strain through muslin and

evaporate to one-fifth of its bulk, then add a little gum arabic together with enough zinc white to colour the mass. When required for use warm and stir well.

## Cement for Sticking Wood Articles in Lathe Chuck

A good recipe is 1 lb. of black rosin, and 2 oz. of yellow wax. These ingredients should be slowly melted together and used warm.

## Rubber Solution or Cement

To 100 parts of finely shredded raw rubber add 10 parts of shellac and 15 parts of rosin, dissolving the ingredients in just sufficient carbon

**Look out for some  
more practical  
home adhesives in  
other issues**

bisulphide. The mixture should be kept tightly corked against evaporation.

Another good formula is 30 grains of raw rubber, 4 oz. of chloroform and 1 oz. of gum mastic. The rubber should be dissolved in the chloroform first, and the mastic added as powder, allowing a full week for the mixture to macerate.

## Cement for Leather

Shred a piece of raw rubber the size of a walnut, and place in a bottle at least 10 times as large as the shreds. Three-quarters fill the bottle with pure benzine. The rubber will immediately swell up and become of the consistency of honey in a few days, when it is ready for use. This cement is very quick-drying and two or three coats should be applied, the earlier ones being allowed to dry well before the next are applied.

Another good leather cement may be

made up by solving 1 oz. of raw rubber in 4 oz. of carbon bisulphide, together with  $\frac{1}{2}$  oz. of gutta-percha and 2 drachms of isinglass. In use, the parts to be cemented should be coated thinly with the solution (which should be allowed to dry), then warmed, and pressed strongly together.

## Glass Cement

A glass cement useful on account of its complete transparency can be made up by mixing 1 part of gum arabic with 2 parts of ordinary rubber solution, allowing two or three days to digest in a warm place. It should be applied sparingly with a brush and kept tightly corked.

## Paper to Celluloid Cement

If scrap celluloid is dissolved in as much acetone or amyl acetate as necessary to make a syrupy solution, celluloid and paper—or even thin card—may be joined together by its use, without any fear of subsequent peeling taking place. Good contact should be maintained between the articles for about half an hour, when the adhesive will be set.

## Paper to Glass Cement

Make up a 10 per cent solution of sulphate of aluminium, and add it to as much gum arabic also in solution. This will stick paper or card to glass or china.

## Fixing Tin or Wood to Celluloid

An intimate mixture of 1 part of powdered shellac,  $1\frac{1}{2}$  parts spirits of camphor and 2 parts of alcohol (brandy or whiskey) will produce an adhesive which will immovably stick tin or wood to celluloid without any curling taking place when drying.

## Heat-resisting Glass to Metal

If the oxide of lead known as Litharge be mixed with sufficient glycerine to form a stiff paste, it may be used for cementing glass to brass or iron in situations where heat is likely to occur, such as the water gauge-glasses of boilers.

## Puppets—(Continued from page 39)

Here are a few suggestions for colour schemes for the proscenium. Black panels with silver, gold, emerald green or vermilion beading; dark green panels with vermilion or gold beading; deep blue and gold; grey and orange or salmon. Any of these schemes will look well and give a pleasant sensation to the audience waiting for the show to begin.

The Draperies or Maskings should be made of good quality strong material. Thick casement cloth can be used and whatever stuff is used it must be opaque to prevent the shadow of the operator being seen. It can be lined or of double material, but stout material will not require this extra work.

The colours and general appearance of these draperies are a matter of real importance. In the old days the Punch booth was usually surrounded by a red and white striped material, suggestive of sunblinds, which may have been good as a 'flash', as showmen call it, but, more often than not, appeared rather tawdry.

The modern hand-puppet showman has more regard for his exterior appearance and likes to have the colours of his draperies synchronizing with those of his proscenium. At the same time, dead black draperies should never be used or other colours of a depressing nature. If a 'flash' is required it can still be obtained by the careful use of bright

but artistic colour.

In the majority of 'Punch' booths the playboard is fitted with its own front drapery usually of velvet with a fringed edge. This pelmet serves the double purpose of decoration, and masking; for it screens the top edge of the front drapery, through which some characters, the clown for instance, make unexpected entries.

On some continental fit-ups there are two carefully screened holes in the front drapery about 1ft. below the playboard through which puppets make an appearance.

(To be Continued)



# A hinged lid and half drop front are fitted to this LADY'S WORK-BOX

**A** USEFUL and welcome article this, to make for a feminine friend or member of the household. It is reasonably light, and can be carried from room to room, as desired. A fall-front is provided, to act as a tray for sewing implements, and an interior rack for reels of cotton, scissors, etc. Underneath the box is a tray that makes a most convenient receptacle for work. The whole can be made from any wood procurable, and be stained and varnished to suit or enamelled in gay colours.

## The Box Portion

The box itself is shown in Fig. 1. Make it with plain glued and butt joints from wood not more than  $\frac{3}{4}$  in. to  $\frac{1}{2}$  in. thickness. Note that the grain of the end pieces of the box run vertically, not horizontally, as in usual practise, and also that the front is divided into two pieces, the upper one being loose and subsequently hinged to the lower fixed one to open outwards. The bottom of the box, of similar thickness wood to the rest, fits inside and is there glued and nailed.

Inside, at the rear, a rack of  $\frac{1}{2}$  in. wood is fitted for the reels, etc. This can be 2 in. in width, inside measurement, and  $1\frac{1}{2}$  in. in depth. Nail the side piece of this to its bottom, fit inside, then nail the bottom to a strip of wood which is itself glued and nailed to the back of the box. In the diagram, Fig. 1, a portion of the fall-down front flap is shown cut away to reveal this.

A strip of thin wood, say,  $\frac{1}{4}$  in. fretwood, is glued and nailed to the top edges of the ends of the box, then continued along the back. A similar fillet is also fixed to the front edge of the fall-down flap. These fillets are cut level on

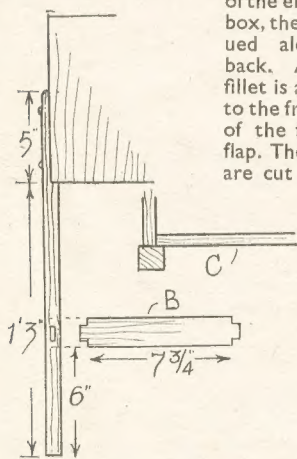


Fig. 3—Legs and rail fixings

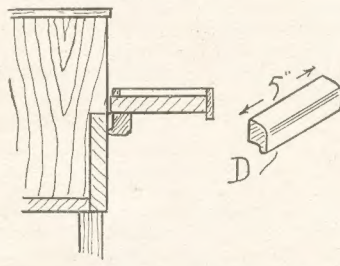


Fig. 2—Section showing drop front and handle

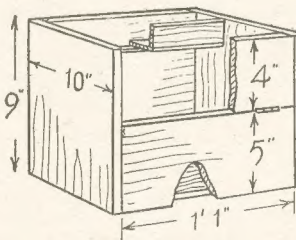
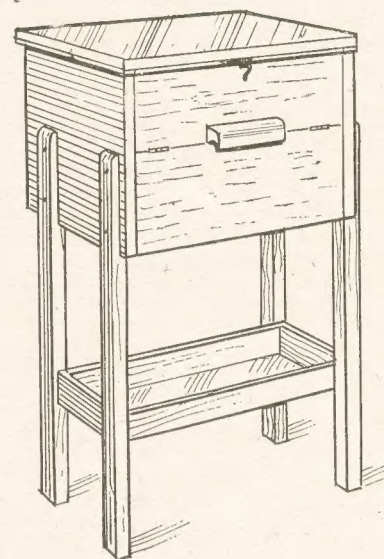


Fig. 1—Showing construction of box portion

the inside of the box, with the exception of the flap one, which extends inside  $\frac{1}{4}$  in. to form one side of a tray. All fillets extend beyond the outside  $\frac{3}{4}$  in. as in detail (A). Hinge the front flap with a pair of  $1\frac{1}{2}$  in. brass butt hinges. Make a neat job of this, then clean up the box



with glasspaper.

The lid is a plain rectangle, the same size as the outside dimensions of the top. It may be necessary here to glue two pieces of wood together for this, and it will be advisable to dowel them together to strengthen the joint. Hinge the top with a second pair of the brass butts, and provide either a hinged stay or a length of brass chain to keep it open.

## Drop Front

The fall-front is now provided with side and back strips of wood,  $\frac{1}{4}$  in. square section, to join up with the edge fillet already there, and make a shallow tray, as in Fig. 2. A pair of handles, as at (D) are shaped up from a strip of wood  $\frac{3}{4}$  in. wide and 1 in. deep. These are rebated underneath  $\frac{1}{4}$  in. deep, as shown, and one is to be fixed to the flap to act as a support when the flap is open, as in the diagram.

inside of the box, will fix each handle securely.

For the legs, prepare 4 strips of wood  $\frac{3}{4}$  in. square and 2 ft. long. Reduce the tops of each leg to half thickness for a length of 5 in. down, as at Fig. 3. From the bottom, at the distance up shown, chisel out a mortise,  $\frac{1}{4}$  in. wide and 1 in. long, from each leg, to receive the side cross rails (B). These will be, of course, cut on the inside surface of each pair of legs, as will be seen in the drawing, which shows, also, how the legs are subsequently screwed to the box.

## Rail Fitting

The cross rail (B) is cut from  $\frac{1}{2}$  in. wood, and is  $1\frac{1}{2}$  in. wide. To the length given add enough to allow for a tenon at each end to fit the mortises. Now glue these rails to the legs, and the legs themselves to the box, keep them parallel, they should then be some  $\frac{1}{4}$  in. from back and front. For appearance's sake round off the top ends of the legs. Two further rails, of similar section wood are cut to join these crossrails, and are nailed to them, as at (C) and not to the legs. A bottom of thin wood is then nailed to the rails, underneath, to complete the work tray.

Clean up the wood with glasspaper and finish according to personal taste. If a common wood like deal is employed, good results can be achieved if, instead of stain and varnish, a coating of enamel is given, over an undercoating of a suitable kind.

## Lacquer Finish

Some pleasing coloured lacquers are also available, and some recipients of this box might well prefer such finish to the more common oak and mahogany ones, which never, in the writer's opinion at least, imitate successfully the better class woods.

The inside of the work-box could well be lined with fancy linen or paper, and the tray with velvet.

A pincushion, made of silk, padded with cotton wool, could also be stuck inside the lid, but it should be circumscribed in size so as not to be in the way of the reel rack, when the lid is closed down.

To keep the hinged flap up, fit a small hook, and its eye is screwed to the underside of the lid. Here it will be seen that a small notch must be cut away from the extending slip on the flap to let the eye down and allow space for the hook to enter it.



# You can make handy additions to the house with these three USEFUL HOME GADGETS

**H**ERE are three very useful items to make which, not being complicated, can be made from oddments of material. Any housewife would appreciate them as a gift for the home.

It is a great convenience to have somewhere on the landing to put odds and ends and cleaning materials, instead of having to stoop down and find them on the floor. This simple table will also be handy on which to stand the small

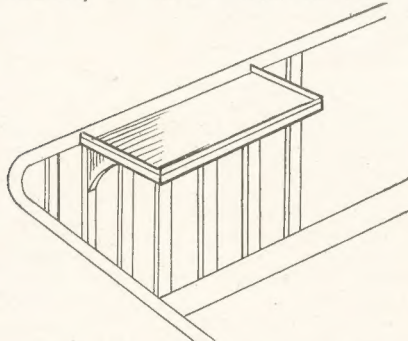


Fig. 1—A hanging tray for banisters

tray when opening a door to a sick-room or with the early morning tea. It is much more comfortable to slip the tray on this table than to bend and have to pick it up, often spilling most of the contents.

It has another advantage and that is in facing outwards and away from the landing, thus taking up no space on the landing which may be rather narrow. It can only be fitted to a landing where the banisters are square or the top part is square, as brackets have to be fitted to the top of banister.

## The Tray

Make a tray from plywood about 18in. by 12in. or larger if you wish. Bead this with some  $\frac{1}{4}$ in. material on the three outsides, leaving the one nearest the banister clear so tray will slide on. Measure the distance most suited to the position of the brackets and fix two pieces of flat clean batten about 2in. by 1in. wide. Keep the tray level with the top of banister, and then fix the brackets

to the upright banisters and to the battens underneath.

Many people have to use the space under the stairs in which to keep the pram but this is also a very tricky problem because space is limited and to get the pram in means much juggling and pushing from side to side. Even then one damages the lino or scratches the wall.

This can all be avoided if you make a flat trolley from some light boards. Probably the good sides of orange boxes will do as there is not a lot of weight and the ends are securely fitted to the end battens. Battens can either go cross-

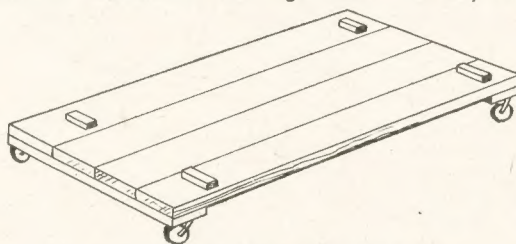


Fig. 2—A trolley for holding the perambulator

ways or lengthways. This depends on the strength of the wood you have used. Make the batten wide enough to take the average castors as these want to be right on the extreme corners.

All you now need is short pieces of 1in. square quartering to keep the pram from running off. Four will do but if you wish you can make it eight to fix tightly on the wheels. The pram will not move as the tyres will grip on the boards.

When baby has grown up you can use this trolley for storing the family trunks under the stairs. Remove the blocks to make the surface flat.

## Hanging Ainer

A portable ainer is always useful and this one has the advantage of being easy to make, simple to put up and packs away in any odd corner.

First of all you need two flat well-

papered battens at least 2in. wide and  $\frac{1}{2}$ in. thick. This foundation is to rest under the picture rail and allow the flat fold-up part to hold the clothes at a suitable distance above the fire. This means that you must adjust the length to your own idea in accordance with the height of the fireplace or the depth of the wall.

You will note from the sketch that a similar folding arm effect is now hinged on to the suspended batten at right-angles. You may need a little stopper of rubber underneath the one on the wall at the base to keep it level, as the picture rail may be a little deep and cause it to jut out.

The top of the wall batten is now fitted with a double turnover picture hook. Make a hole in this and fit the hook so the small turn-up is to the front with the wide turn-up hitched to the rail allowing the hanging batten

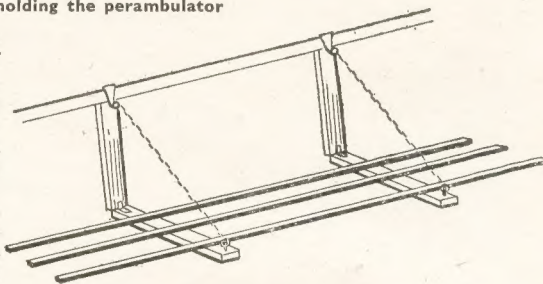


Fig. 3—An ainer hung from the picture rail

to support the outstretched arms which could be 18in. long. Longer than this would be a danger when bending down to the fire. Two hooks are put in the ends and chain used to loop to the picture hooks.

The rails can be from dowell rods and about 4ft. long. When not in use the whole thing can be folded up and, perhaps, you could make your cross-bars to slide in grooves or through fairly large screw-eyes. This system would make it more portable to be easily removed when not required.

## Photography—(Continued from page 43)

It would be wrong to close this chapter without pointing out one great snag which frequently occurs in interior home photographs. Some rooms have wallpaper with very prominent designs. These have an unfortunate habit of making themselves very conspicuous in the resulting prints. Make a point of noticing the background in every case. It may be that a plant, bowl of flowers, or even a china vase, must be moved to prevent it looking as if it was growing

out of the head or side of your friend.

One print sent for a competition recently was a close-up, head and shoulders, of a young girl but there was a ring of flowers completely circling the head. This ring was a portion of the wall-paper design!

The general decorations of a room; the walls, curtains, etc., require consideration. White or cream will reflect the light and shorten the exposure and the contrary must be expected where

dark drapings and furniture prevail.

During the next few weeks make some experiments so as to be ready for some good shots and fun with the camera at Christmas time amongst your friends.

This is worth while because in another article we shall tell you how to undertake special work for Christmas as calendars, cards and pictures at your parties during the festive season. It will be well worth undertaking.



# How to arrange lighting and grouping for amateur INDOOR PHOTOGRAPHY

**T**HERE may be some readers who are wondering how to keep the camera busy at all seasons of the year. They are questioning the practicability of making any exposures during the winter months when daylight is so limited and very often the weather at the week-ends not sufficiently inviting to urge even the keenest of us to take a chance or make a short excursion to the countryside. Nevertheless, if the camera is already loaded, and if a really bright day comes along, then the opportunity should not be missed.

## For Social Gatherings

There is, however, another type of work which every amateur will find full of interest. He will be well repaid by the enjoyment derived, and the winter months are the best because it can be done during the dark evenings in your own home. After a little experience it can be extended to the local hall where you have Social Gatherings, Scouts or other Youths Clubs, and there is no reason why you should not become quite efficient in taking portraits of your friends in their own homes.

## Lights Needed

Photography by artificial lighting is a very simple matter in these days when the majority of homes are supplied with electricity. Therefore, it is quite easy to have a nest of three or four fairly powerful bulbs. For that matter, one bulb of extra powerful wattage will satisfy the necessary light with a fast or moderately-fast film.

As most cameras—even the box form—are fitted with at least two or three stops, you can begin to realize to what extent this substitute for daylight can help to make this other branch of the hobby practicable and provide ample scope for developing something totally different from the usual subjects connected with outdoor and 'press-the-button' camera work.

## DESIGN 2816 FOR MODEL 'O' GAUGE STATION

*The gift design this week is for making the model modern station as illustration. A complete kit of material for all parts is obtainable from Hobbies Branches for 18/5, or sent carriage paid for 21/- from Hobbies Ltd., Dereham, Norfolk.*



As with all other subjects there are certain factors to be considered at the commencement, otherwise failures are likely to occur. To do successful work let the following hints be carefully noted. The light power is naturally the factor of most importance. Taking a wattage of 500 as a basis it should be possible to obtain a fairly correct exposure by giving  $\frac{1}{2}$  second with the stop F8 and using a fast film such as H.P.3.

If this combination is possible, then make a few variations both of stop and the exposure time and take a note of the data used for each shot. It should be quite an easy matter to prove whether too much or too little light is being used.

When making these initial tests it is wise to make them in the same room, to get the same person to pose for you and to be sure the distance between the camera and the person and between the light and the person does not vary. This distance is an important factor and must be carefully considered. Be sure to check the scale on the camera with the actual space from the lens to the nose or eyes of the sitter. They must agree. The light should be placed in a position behind and to the side of the camera to throw its full effect on the face without casting any shadows.

## A Portable Stand

A very effective stand for the light, one that is portable and easy to carry, can be constructed as follows. Procure 3ft. of metal gas barrel and 4ft. of bamboo or wooden rod which should fit comfortably in the metal tube. About 3in. from the top of the gas tube have a threaded hole cut in the side to take a thumb screw for gripping the wooden rod at any desired height. The bottom end of the barrel must be fitted into a socket, fastened where two slats of wood about 15in. by 3in. by 1in. are joined at the centre, and which slats serve as feet.

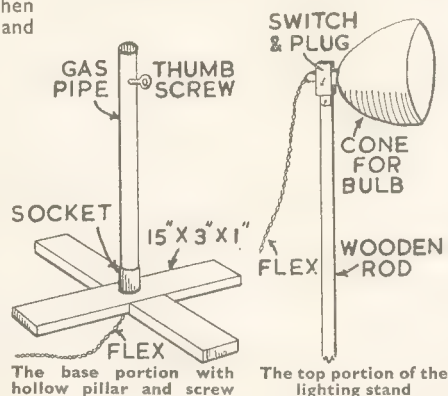
The actual lamp carrier should be of metal sheet shaped to a cone and enamelled white, thus serving as a reflector. The amount of flex required must be governed by the size of the room and the distance from the wall plug. Care must be taken not to attempt so much power as to cause overcharging of the circuit. A switch and connection should be conveniently placed near the holder for quickly operating the lamps.

Another useful piece of apparatus for this work is a screen, made of butter muslin or other fine semi-transparent material stretched over a child's hoop and having a thin stick attached to it about 2ft. to 3ft. long. This screen is for subduing the power of the light on the subject and for giving a softer effect.

Very often portraits by artificial lighting have too much contrast, and this will overcome it.

## For Model Work

Although details have been given for making a stand for the light and also a screen for soft effects, yet these must not be considered absolutely necessary. They are, however, very helpful, especially if you become keen on this branch of the work and desire to make



some pictures of your models, studies of home life, table-top photography, copying, photographing objects of art, woodwork, china and similar subjects where it is essential to avoid shadows and to have the light fairly close to the subject.

It should be emphasized that portraits taken in the home should have a 'homely' touch about them. For instance, a portrait of father will be much more pleasing if it shows him reading, cross-wording or at his hobby; likewise, mother at her needlework or knitting. A boy or girl at their homework makes an excellent study, especially if they are concentrating on their work and not on being 'took'.

## Groups

A family group will certainly have to be tried and this will possibly necessitate a fairly long distance from the camera to the nearest person to ensure getting everyone on the film. Here again, endeavour to get each individual interested in something other than what you are doing. If the exposure is a matter of some seconds it is a good tip to tell them it is going to be a time exposure.

These initial trials can be most interesting and if details of lighting, exposure time, distance and stop used are recorded you will find them very helpful. Attempts made subsequently in a friend's house or at the club should be quite easy to manipulate and be reasonably successful.

(Continued foot of page 42)





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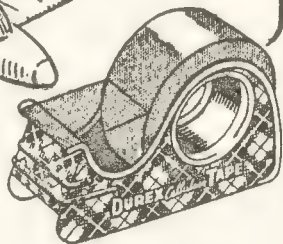
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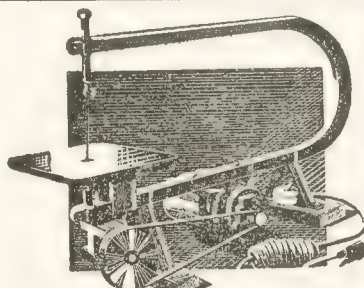
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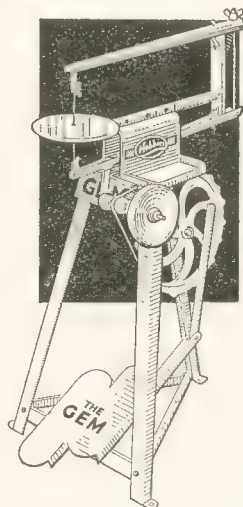
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# Hints for the amateur fisherman, so he can enjoy FLOAT-FISHING FOR PIKE

**P**IKE fishing is at its best in autumn and winter, when the weeds die down in river and lake. Pike are well known as good sporting fish. They are found in all kinds of waters—ponds, clay-pits, drains, canals, meres, lakes, rivers, and in lochs sacred to the trout.

Pike run to hefty proportions, and every season specimens of from 20lb. to 30lb. and over are caught. A pike of 10lb. to 15lb. can be considered a worth-while capture. Indeed, jack of 5lb. to 7lb. will provide the angler with plenty of fun.

There are many methods of pike-fishing, but in this article we deal with one only, i.e., fishing with a live-bait on float-tackle. It is a useful method and calls for no particular knowledge, yet it is not as easy as it may seem, and calls for practice and experience.

## Suitable Outfit

A cane rod of 8ft. to 10ft. fitted with winch fittings and bridge or upright rings; a reel of the Nottingham wood pattern, 4in. diameter; a line of best quality silk or Nylon, breaking strain of twenty pounds, some 60 to 80 yards long; a trace of fine twisted wire or gimp with swivels and lead; and a Jardine snap-tackle. Some anglers prefer to use a single hook, or a triangle, but the beginner will do better with the former tackle.

The float may be one of the egg-shaped type, fairly big, painted crimson on top, green below. The type with a split cork barrel and a loose wooden peg is best, so that quick and secure attachment can be made. You slide the line into the crack, then insert the peg and push down tightly, until the line is held firmly.

In addition to the big main float some anglers attach to the line a foot or two above the float a smaller one known as a pilot float. This keeps the line from sinking and fouling the hook tackle.

If you desire to be economical you can use corks instead of floats. Beer barrel bungs are useful.

Other items of the float-fisher's pike outfit include a bait-kettle with inside strainer; a knobstick wherewith to stun the fish when landed; a pike-gag or piece of suitable wood to prop open the fish's mouth whilst you extract the hooks; a fish bass; and a gaff or biggish landing-net. Carry a few extras such as leads, tackles, hooks, an old duster to wipe your hands on after handling a fish, and a jack-knife.

## Baits that Attract

Baits for use in float-fishing for pike include dace, roach, bleak, gudgeon, small chub, or a wee baby jack. The latter is a most attractive bait for a grandfather or grandmother pike, for, believe it or not, big pike are partial to a meal off one of their own kind.

Best of all is a live dace from 4in. to 6in. long, though these delicate fish are rather tender and you need to keep renewing the bait, so require a good number for a day's piking. Small roach are more easily procured than dace, and are also useful.

## Carrying Bait

The fresher and livelier the baits the better. They are carried in the bait-kettle or any suitable receptacle. Sink the bait-can in the shallow water when you arrive at lake or pond, but see that the lid is firmly shut. The perforations in the lid allow fresh water percolating into the can, thus keeping the live-baits

lucky is in, sooner or later the big float will be jerked in a manner that convinces you it is not the live-bait pulling it around. After a few seconds the float starts 'running off', now jerked under, now bobbing up again, until at last it slides right under and stays down.

If using a small pilot float in addition to the main float, wait until that also goes under, then raise your rod, gather in any slack line and drive the hooks home, very deliberately. Having given the fish sufficient time to get well hold of the bait and tackle, you are pretty sure to get him well hooked.

Always be sure and wind up any slack line before attempting to 'strike'. This striking business is a trick only acquired by experience; it is so easy to strike too soon, or wait too long. No hard-and-fast rule can be applied, but it is wiser to allow the fish plenty of time rather than to strike at once, when you are float-fishing.

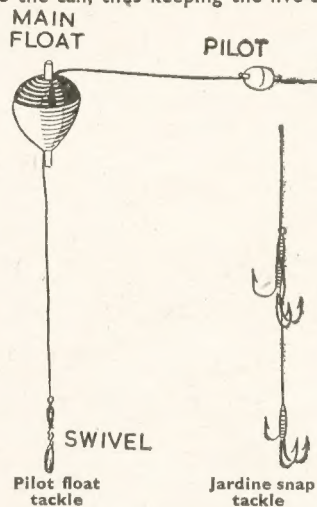
## Gag it First

If your captive is a sizable one, and you intend to retain it, turn it out of the meshes of the landing-net and stun it with a blow from the knobstick or other suitable weapon. Never attempt to unhook a pike without first propping open his strong jaws, after first stunning it. If you have nothing else, use a big stone or boulder, to give the fish the 'knock-out'. A pike's mouth is well equipped with rows of recurved teeth and if he grabs your hand you know about it.

Float-fishing for pike is a specially useful method for fishing in ponds, brick-pits, clay-pits, drains, lakes, meres and rivers that are free from weeds. It is a method well adapted to lakes and ponds. If you have the use of a boat or punt, so much the better, for you can move around, trying spots here and there. Near weed-beds, by banks of rushes, and in open spaces between weeds, and any deep holes are likely spots. If fishing from bank of lake or pond you have more difficulty in throwing out a fairly heavy bait to any distance, but practice will in time help you over that.

The pike is an interesting fish, a sort of water-tiger lurking in weedy jungles ready to pounce upon any unsuspecting prey. His shape, with flattened head and sharp snout, and his stream-lined body, mark him a fish designed for short swift dashes. He lurks ready to 'pounce' as it were, upon any live creature swimming past his lair, whether fish, rat, vole, or small water-bird. When hooked he puts up a good fight.

There is much fun in fishing alone, but many like to have company to share the excitement and experience. If you do not know a present fisherman, you can perhaps persuade a friend to come along and make him as enthusiastic and capable as you are yourself.



fresh and brisk. Remember, a half-dead bait is not much use.

## How to Bait a Tackle

In fixing a live bait on a snap-tackle great care must be exercised in order to avoid pinching or otherwise damaging it. Insert the top triangle of the snap at the forward end of the dorsal fin of the dace or roach—or other bait—and then pass the reverse hook of the lower triangle through the skin behind the pectoral fin. If using a single hook or a triangle, pass the point and barb through the back of the bait just behind the dorsal fin.

Casting out the bait calls for a little practice, but by giving your rod-top a good swing forward, with the baited tackle hanging down from the rod-point at the end of a yard of line, you should have no difficulty in getting the bait well out. Check the reel with your forefinger as the bait hits the water, to avoid an over-run of line.

Having got your bait into a likely spot, all you have to do is to wait and watch the float until a pike seizes the bait and the crimson top of the float bobs under.

## Striking a Fish

Keep your eye on the float. If one's



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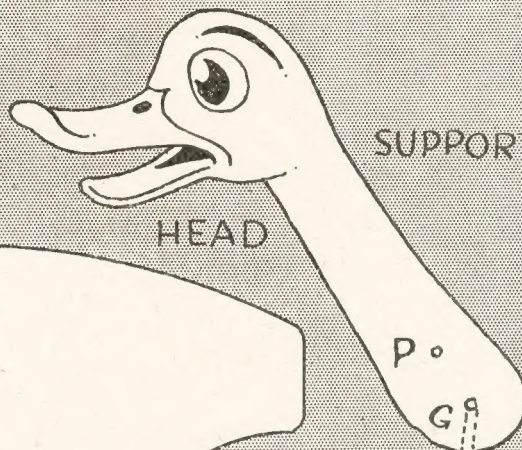


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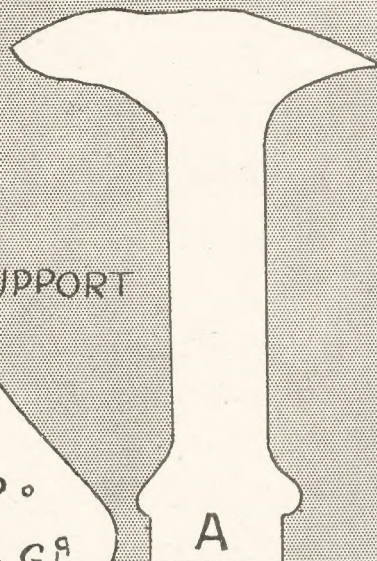


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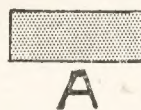
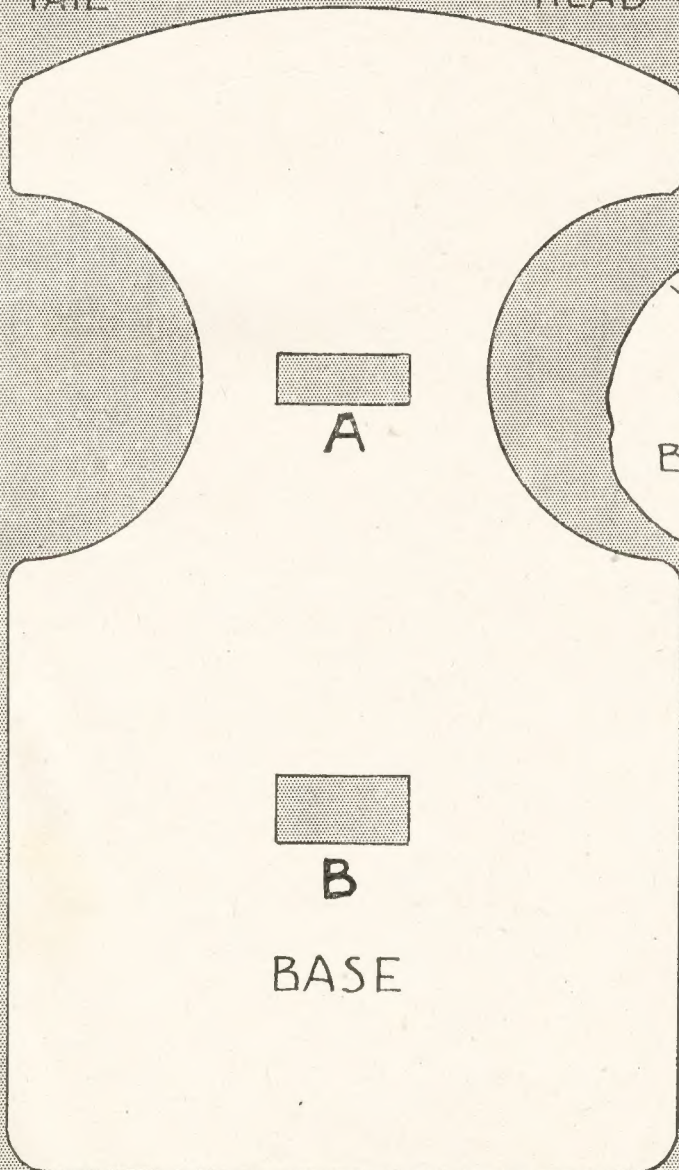


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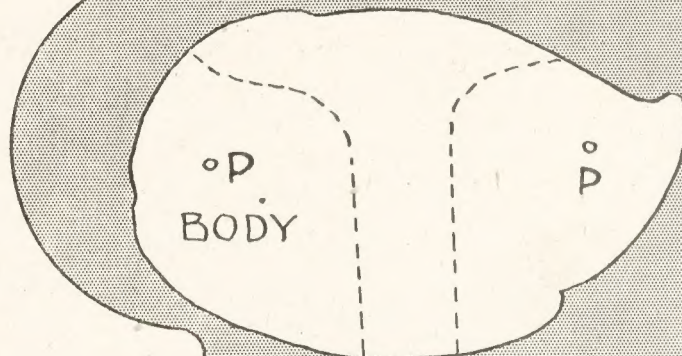


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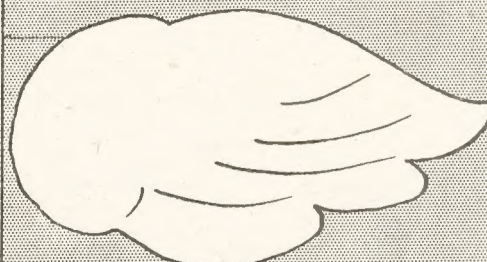
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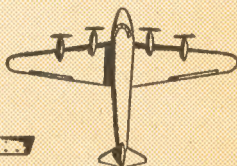
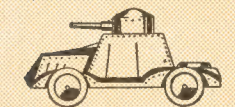


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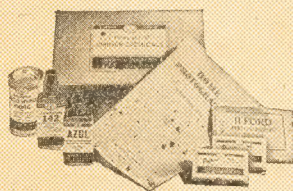
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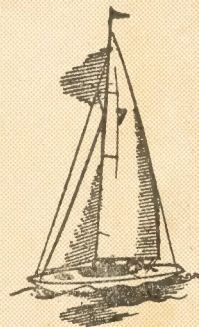
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